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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,162	08/22/2003	Keith C. Thomas	P1976US00	9183

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EXAMINER

HUNNINGS, TRAVIS R

ART UNIT

PAPER NUMBER

2632

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,162

Applicant(s)

THOMAS, KEITH C.

Examiner

Travis R. Hunnings

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,9 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fantom Orb Disk Drive (Fantom; www.fantomdrives.com/support/manuals/orb_supplement.pdf).

Regarding claim 1, Fantom discloses *Orb Drive Supplemental Information Guide* that has the following claimed limitations:

The claimed activity indicator visible from a panel of the electronic device, the activity indicator configured to provide a continuous indication of the presence of a first continuous operating condition associated with the electronic device is met by the status light (Front Panel drawing) indicating that the drive is ready by a solid green light (During Operation section);

The claimed activity detection circuit coupled to the activity indicator, the activity detection circuit configured to generate an activity signal when detecting a second periodic operating condition associated with the component and to communicate the activity signal to the activity indicator would have been inherent in the device to operate

the functions of detecting the drive being on and loading/unloading/using the disk and altering the status light to reflect the current condition (During Operation section);

The claimed activity indicator is interrupted from continuously indicating the presence of the first continuous operating condition by the activity signal thereby producing an indication of the second periodic operating condition is met by the flashing amber light to indicate that the disk is loading or in use which would interrupt the constant green light (During Operation section).

Regarding claim 2, the claimed first continuous operating condition including a power-on operating condition and the second periodic condition including a hard disk drive operating condition is met by the green light indicating power being present to the device and the flashing amber light indicating data being written or read on the ORB disk (LED Indicator Definitions section). One of ordinary skill in the art would have considered reading or writing data to an ORB disk to be a hard disk drive operating condition because hard disk drives also read or write data to a disk.

Regarding claim 14, the claimed activity indicator comprising a single LED is met by the status light of the Fantom ORB drive being a single LED as shown in the Front Panel illustration.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 3-6, 9, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fantom Orb Disk Drive (Fantom; www.fantomdrives.com/support/manuals/orb_supplement.pdf).

Regarding claim 3, Fantom does not specifically disclose the claimed activity indicator including a single color LED however it would have been obvious to one of ordinary skill in the art that a single color LED would be able to accomplish the same indication by providing a steady indication when no disk access was occurring (representing the steady green light as disclosed by Fantom) and also able to provide the flashing indication when disk accesses were occurring (representing the flashing amber light as disclosed by Fantom) and using a single color LED would lower costs. Therefore it would have been obvious to one of ordinary skill in the art to use a single color LED. Also at any point in time, the disclosed indicator of Fantom is always indicating only a single color, whether it be green, amber or red and would therefore be providing single-color indication and would therefore be considered a single-color LED by one of ordinary skill in the art.

Regarding claim 4, it would have been obvious to one of ordinary skill in the art to use the status light as taught by Fantom to indicate the status of any disk drive on a computer system, including a hard disk drive.

Regarding claim 5, the claimed indicator configured to provide illumination and being visible from a front panel of the computer system, the illumination of the indicator being provided in response to the presence of a first continuous operating condition is met by the status light (Front Panel drawing) indicating that the drive is ready by a solid green light (During Operation section);

The claimed activity detection circuit coupled to the indicator, the activity detection circuit being configured to generate an activity signal indicative of the presence of a second periodic operating condition associated with a component of the computer system, and to communicate the activity signal to the indicator would have been inherent in the device to operate the functions of detecting the drive being on and loading/unloading/using the disk and altering the status light to reflect the current condition (During Operation section);

The claimed indicator is configured to be interrupted from illuminating in response to the presence of the first continuous operating condition by the activity signal to thereby produce an indication of the second periodic operating condition comprising intervals when the indicator is interrupted from illuminating in response to the presence of the first continuous operating condition is met by the flashing amber

light to indicate that the disk is loading or in use which would interrupt the constant green light (During Operation section);

The claimed continuous indication by the activity indicator being characterized by illumination of the activity indicator and interruption of the continuous indication of the activity indicator is characterized by extinguishing the activity indicator is met by the steady green light indicating that there is power to the device and the flashing amber light indicating the reading or writing of data to the disk (LED Indicator Definitions section). One of ordinary skill in the art would have considered the flashing amber light to be extinguishing the activity indicator.

Fantom does not specifically disclose the claimed activity indicator including a single color LED however it would have been obvious to one of ordinary skill in the art that a single color LED would be able to accomplish the same indication by providing a steady indication when no disk access was occurring (representing the steady green light as disclosed by Fantom) and also able to provide the flashing indication when disk accesses were occurring (representing the flashing amber light as disclosed by Fantom) and using a single color LED would lower costs. Therefore it would have been obvious to one of ordinary skill in the art to use a single color LED. Also at any point in time, the disclosed indicator of Fantom is always indicating only a single color, whether it be green, amber or red and would therefore be providing single-color indication and would therefore be considered a single-color LED by one of ordinary skill in the art.

Regarding claim 6, the claim is interpreted and rejected as claim 2 stated above.

Regarding claim 9, The claimed activity being configured to provide a continuous indication of the presence of a power-on operating condition of the electronic device is met by the status light (Front Panel drawing) indicating that the drive is ready and powered on by a solid green light (During Operation section);

The claimed activity detection circuit coupled to the activity indicator, the activity detection circuit configured to generate an activity signal when detecting an intermittent operating condition associated with activity by the storage device and to communicate the activity signal to the activity indicator would have been inherent in the device to operate the functions of detecting the drive being on and loading/unloading/using the disk and altering the status light to reflect the current condition (During Operation section);

The claimed activity indicator is interrupted from continuously indicating the presence of the power-on operating condition of the electronic device by the activity signal to thereby produce an indication of the intermittent operating condition of the electronic device is met by the flashing amber light to indicate that the disk is loading or in use which would interrupt the constant green light (During Operation section);

The claimed activity by the storage device comprising transferring data to or from the storage device is met by the flashing amber indication showing that the disk is in use, it would be inherent that an ORB data disk being in use would be storing or retrieving data stored on the disk;

The claimed continuous indication by the activity indicator is characterized by illumination of the activity indicator and interruption of the continuous indication of the activity indicator is characterized by extinguishing the activity indicator is met by the steady green light indicating that there is power to the device and the flashing amber light indicating the reading or writing of data to the disk (LED Indicator Definitions section). One of ordinary skill in the art would have considered the flashing amber light to be extinguishing the activity indicator.

Fantom does not specifically disclose the claimed status light providing indication for activity of a hard disk drive however it would have been obvious to one of ordinary skill in the art to use the status light as taught by Fantom to indicate the status of any disk drive on a computer system, including a hard disk drive.

Regarding claim 15, the claim is interpreted and rejected as claim 9 stated above.

Regarding claim 16, Fantom does not specifically disclose the claimed activity indicator including a single color LED however it would have been obvious to one of ordinary skill in the art that a single color LED would be able to accomplish the same indication by providing a steady indication when no disk access was occurring (representing the steady green light as disclosed by Fantom) and also able to provide the flashing indication when disk accesses were occurring (representing the flashing amber light as disclosed by Fantom) and using a single color LED would lower costs.

Art Unit: 2632

Therefore it would have been obvious to one of ordinary skill in the art to use a single color LED. Also at any point in time, the disclosed indicator of Fantom is always indicating only a single color, whether it be green, amber or red and would therefore be providing single-color indication and would therefore be considered a single-color LED by one of ordinary skill in the art.

5. Claims 1-4 and 14 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Bush et al. (Bush; US Patent 5,214,762) for the record.

Regarding claim 1, Bush discloses Disk Drive Activity Indicator that has the following claimed subject matters:

The claimed activity indicator visible from a front panel of the electronic device is met by the LED mounted on the front panel of a desktop computer (abstract);

The claimed activity indicator configured to provide a continuous indication of the presence of a first continuous operating condition associated with the electronic device is met by the LED being triggered in response to I/O operations involving the hard drive (abstract) and therefore by definition the LED is not triggered (turned off) during the period when the computer is on but there is no activity involving the hard drive.

Therefore the LED is continually indicating that there is no activity in the hard drive while it is off;

The claimed activity detection circuit coupled to the activity indicator is met by the activity indicator triggering logic (46);

The claimed activity detection circuit configured to generate an activity signal when detecting a second periodic operating condition associated with the electronic component and to communicate the activity signal to the activity indicator is met by the triggering logic on the motherboard detecting the I/O operations involving the hard drive and activating the LED by use of a retriggerable monostable multivibrator (abstract);

The claimed activity indicator being interrupted from continuously indicating the presence of the first continuous operating condition by the activity signal, thereby producing an indication of the second periodic operating signal is met by the LED being triggered (turning on) when the triggering logic detects an I/O function relating to the hard drive (abstract).

See figure 4.

The indications of the disclosed invention and claimed invention both correspond to the same events; the activation and non-activation of an electronic device such as a hard disk drive. The choice of indications themselves, whether they are continuously on and interrupted on activation or continuously off and turned on during activation, does not merit novel inventive material. Therefore it would have been obvious to one of ordinary skill in the art to have chosen either of the above mentioned indication choices.

Regarding claim 2, the claimed first continuous operating condition including a power-on operating condition is met by the LED not being triggered while the computer

is powered-on and there is no access to the hard disk drive (see rejection to claim 1 stated above). The claimed second periodic operating condition including a hard disk drive operating condition is met by the LED being triggered when the hard drive is accessed (abstract).

Regarding claim 3, the claimed activity indicator including a single color LED is met by the LED mounted on the front panel of the desktop computer. The LED has only two possible states; an on-state and an off-state. Therefore it would have been obvious to one of ordinary skill in the art to use a single-color LED to reduce costs because the extra functionality of a multi-color LED would not be needed or desired.

Regarding claim 4, the claimed electronic device including a computer system and the component including a hard disk drive is met by the desktop computer having a hard disk drive activity indicator such as an LED mounted on the front panel remote from its associated hard disk drive (abstract).

Regarding claim 14, the claimed activity indicator comprising a single LED is met by the LED on the front panel being a single LED (column 3, lines 42-68 and column 4, lines 1-6).

Response to Arguments

6. Applicant's arguments with respect to claims 5 and 9 have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments filed 27 February 2006 have been fully considered but they are not persuasive. Applicant argues the following:

Argument A: With respect to rejected claim 1, applicant argues that there is no interruption of the 'green' LED during the data read/write operations or the illumination of the 'amber' LED, the green LED may remain illuminated while the amber LED is flashing.

Argument B: With respect to rejected claim 1, applicant argues the usage of more than one LED leads one of ordinary skill away from the structure and benefits of the claimed invention.

Argument C: With respect to rejected claim 1, applicant argues that a user of the Bush system, viewing the LED of the disk drive activity indicator, does not know if the LED is "turned off" because there is presently no disk drive activity, or is "turned off" because the entire computer system is simply "turned off". Absent the presence of some disk drive activity, the Bush indicator is not only "turned off" when there is no disk drive activity, but is also "turned off" when the computer is "turned off". Thus, unless

there is currently some disk drive activity actually occurring, one has no idea from the Bush indicator whether the computer is "on" or "off".

Argument D: With respect to rejected claim 1, applicant argues that the Bush patent would not lead one of ordinary skill in the art to consideration of operating conditions of both "an electronic device" and "a component of the electronic device", as required by claim 1, and the rejection of the office action appears to reflect this, as only the operating states of the disk drive (and not the operating condition of the entire Bush computer system) are discussed. But, as noted above, the user of the Bush system is not provided with any information as to whether the computer system is turned on or turned off, unless, and only when, disk drive activity is actually occurring.

Argument E: With respect to rejected claim 1, applicant argues that the claimed invention is not merely another equivalent "choice" that one of ordinary skill in the art could make for indicating disk drive activity, as the function of the claimed system provides additional capabilities as compared to the Bush system. In particular, the disk drive activity indicator system taught by Bush, and its manner of indicating disk drive activity, is completely incapable of providing an effective indication of the "power on" or "power off" status of the Bush system, as the disk drive activity indicator only illuminates during the time that disk drive accesses or interrupts are actually occurring. More significantly, Bush discloses that the disk drive activity indicator is "off" during times that specific disk activity is not occurring, but would also be "off" when the Bush system is

Art Unit: 2632

powered down (and thus there is no disk activity because the power to the system is cut off). As a result, a user of the Bush system would not be able to look at its disk drive activity indicator and be able to tell if the system is powered up, unless disk activity happened to coincide with the precise time that the user looked at the disk drive activity indicator. In contrast, with the system of claim 1, one simply has to look at the claimed indicator to see if power is being supplied to the system, and if the indicator is periodically being interrupted (such as by flashing off), one also knows that disk activity is occurring.

Argument F: With respect to rejected claim 1, applicant argues that one of ordinary skill in the art, considering the Bush patent and the knowledge that heretofore power indicators and disk activity indicators are separate elements, would presume that the Bush system employs a separate power on indicator, and thus any attempt to further modify the Bush disk drive activity indicator to also indicate the power status of the system would be superfluous.

Argument G: With respect to rejected claim 1, applicant argues that the claimed invention requires the first continuous condition be an operating condition.

Responses:

Regarding argument A, the Fantom reference clearly states that during operation the status light is a steady green when the drive is powered on and the status light is

flashing amber when the drive is in use. One of ordinary skill in the art would have understood that to mean that the LED no longer emits a green light while the drive is in use and is therefore interrupted when in use (by the flashing amber light).

Regarding argument B, neither the Bush reference nor the Fantom reference disclose using more than one led to provide the status information as claimed. Bush uses one LED as disclosed in column 3, lines 42-68 and column 4, lines 1-6. Fantom uses one LED as shown in the Front Panel illustration.

Regarding arguments C, D and F, claim 1 states “the activity indicator configured to provide a continuous indication of the presence of a first continuous operating condition associated with the electronic device” which is clearly met by the system of Bush. The lack of indication as set forth by Bush is still a form of indication to the user that a continuous operating condition associated with the electronic device is occurring, specifically that currently no I/O writes are being performed by the computer (electronic device) on the hard drive (component of the electronic device). There is no mention in the claim language of claim 1 of a limitation to provide indication of a power on or power off condition.

Regarding argument E, again there is no mention in the claim language of claim 1 of a limitation to provide indication of a power on or power off condition. The indications of the disclosed invention and claimed invention both correspond to the

same events; the activation and non-activation of an electronic device such as a hard disk drive. The choice of indications themselves, whether they are continuously on and interrupted on activation or continuously off and turned on during activation perform the same functionality and indication to the user. Therefore it would have been obvious to one of ordinary skill in the art to have chosen either of the above mentioned indication choices.

Regarding argument G, the first continuous indication would be considered an operating condition. In the Bush reference, the lack of indication (which would still be considered to be a form of indication) when the device is powered on is indicating an operating condition, that being the drive being turned on. In the Fantom reference, the steady green light of the status light indicates the drive is ready and powered on which would clearly be an operating condition of the drive.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

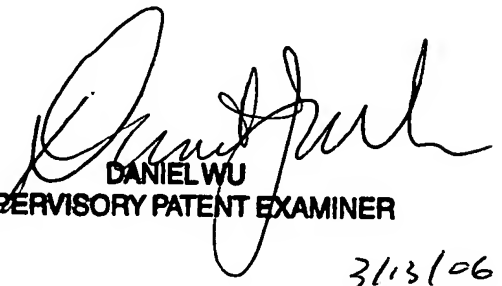
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis R. Hunnings whose telephone number is (571) 272-3118. The examiner can normally be reached on 8:00 am - 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRH


DANIEL WU
SUPERVISORY PATENT EXAMINER
3/13/06